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(12) United States Patent Hamlyn

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(54) MACHINE FOR APPLYING FIBERS HAVING A SAFETY SYSTEM

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CPC .. B29C 70/382; B29C 70/384; B29C 70/386; B29C 70/388

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References Cited U.S. PATENT DOCUMENTS

US 9,409,350 B2

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FOREIGN PATENT DOCUMENTS

FR 2 882 681 A1 9/2006 FR 2 937 582 A1 4/2010 (Continued)

OTHER PUBLICATIONS

Corder, DA, et al, "High Power Laser Beam Delivery Monitoring for Laser Safety", Optics and Lasers in Engineering, 27 (1997), pp. 479-492.*

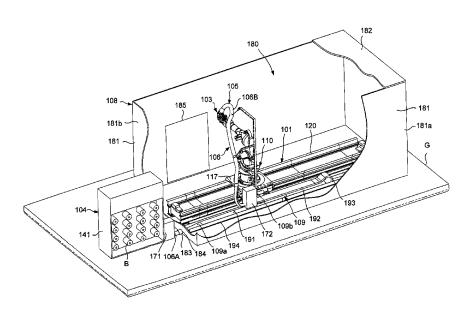
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(57) ABSTRACT

A fiber application machine comprising a fiber application head, a displacing system to displace said fiber application head, a fiber storage, and a fiber conveyor to convey the fibers from the fiber storage to the application head. The machine further comprises a safety system comprising at least one perimeter barrier defining a safety zone wherein the displacing system carrying the application head is placed, the fiber storage being arranged outside of said safety zone.

9 Claims, 7 Drawing Sheets



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